

Appl. No. 09/982,363
Amdt. Dated Sep. 28, 2005
Reply to Advisory Action of Sep. 12, 2005

In the Claims:

Claims 1-8 (canceled)

Claim 9 (previously presented): An optical add-drop multiplexer comprising:

a first ferrule having an input optical fiber, an output optical fiber and a third optical fiber stationed therein;

a first graded index lens;

a first bandpass filter having a first central wavelength;

a second bandpass filter having a second central wavelength;

an optical crystal;

a second graded index lens; and

a second ferrule having a first adding optical fiber and a second adding optical fiber stationed therein, and a first dropping optical fiber and a second dropping optical fiber stationed therein;

wherein the first graded index lens, the first and second bandpass filters, the optical crystal and the second graded index lens are successively placed between the first ferrule and the second ferrule, an optical multiplexed signal from the input optical fiber is transmitted to the first bandpass filter, from which an optical signal having a wavelength identical to the first central wavelength of the first bandpass filter is output to the first dropping optical fiber, and other optical signals having other wavelengths are transmitted to the second bandpass filter via the third optical fiber, from which an optical signal having a wavelength identical to the second central wavelength of the second bandpass filter is output to the second dropping optical fiber, and other optical signals having other wavelengths are coupled with optical signals from the first

Appl. No. 09/982,363

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and the second adding optical fibers whose wavelengths are respectively identical to the first and second central wavelengths of the first and the second bandpass filters and are transmitted to the output optical fiber.

Claim 10 (original): The optical add-drop multiplexer as described in claim 9, wherein the first and second bandpass filters are thin-film filters.

Claim 11 (original): The optical add-drop multiplexer as described in claim 9, wherein the first and second bandpass filters are attached on the first graded index lens.

Claim 12 (original): The optical add-drop multiplexer as described in claim 10, wherein the first and second bandpass filters are attached on the first graded index lens.

Claim 13 (original): The optical add-drop multiplexer as described in claim 9, wherein a profile of the optical crystal is a generally regular hexagon.

Claim 14 (original): The optical add-drop multiplexer as described in claim 9, wherein a profile of the optical crystal is an egg-timer shaped hexagon.

Claim 15 (original): The optical add-drop multiplexer as described in claim 9, wherein the first ferrule further defines four holes, two of the holes respectively hold the input optical fiber and the output optical fiber therein and the other two of the holes respectively hold two ends of the third optical fiber, and the second ferrule defines four holes with four optical fibers respectively inserted therein.

Claim 16 (previously presented): A multicenter optical add-drop multiplexer module comprising a plurality of optical add-drop multiplexers sequentially connected together from the first to the last,

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Amdt. Dated Sep. 28, 2005
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each optical add-drop multiplexer comprising:

a first ferrule having an input optical fiber, an output optical fiber and a third optical fiber stationed therein;

a first graded index lens;

a first bandpass filter having a first central wavelength;

a second bandpass filter having a second central wavelength;

an optical crystal;

a second graded index lens; and

a second ferrule having a first adding optical fiber and a second adding optical fiber stationed therein, and a first dropping optical fiber and a second dropping optical fiber stationed therein;

wherein the first graded index lens, the first and second bandpass filters, the optical crystal and the second graded index lens are successively placed between the first ferrule and the second ferrule, an optical multiplexed signal from the input optical fiber is transmitted to the first bandpass filter, from which an optical signal having a wavelength identical to the first central wavelength of the first bandpass filter is output to the first dropping optical fiber, and other optical signals having other wavelengths are transmitted to the second bandpass filter via the third optical fiber, from which an optical signal having a wavelength identical to the second central wavelength of the second bandpass filter is output to the second dropping optical fiber, and other optical signals having other wavelengths are coupled with optical signals from the first and the second adding optical fibers whose wavelengths are respectively identical to the first and the second central wavelengths of the first and the second bandpass filters and are transmitted to the output optical fiber; and

wherein the bandpass filter of each optical add-drop multiplexer has

Page 4 of 6

Appl. No. 09/982,363

Amdt. Dated Sep. 28, 2005

Reply to Advisory Action of Sep. 12, 2005

a different central wavelength, the input optical fiber of the first optical add-drop multiplexer and the output optical fiber of the last optical add-drop multiplexer respectively serve as an input end and an output end for optical signals, and the output end of each optical add-drop multiplexer connects with the input end of its adjacent optical add-drop multiplexer.

Claims 17-20 (canceled)